

### **REMARKS**

In the Final Office Action mailed 23 August 2007, the examiner maintains the position that independent claims 1, 35, 36, 39, and 56 are anticipated under §102(b) by Nielsen (US2002/0080863). In response, the applicants submit a Request for Continued Examination, amend the claims as shown herein, and offer the following remarks.

As shown above, the applicants amend independent claims 1, 35, 36, and 56 to explicitly require the computation of the one or more model impairment terms, the measurement of the received signal impairment correlations, the adaptation of the model fitting parameters based on the measured received signal impairment correlations and the one or more model impairment terms using a fitting process, and the calculation of modeled impairment correlations based on the adapted model fitting parameters. In addition, the applicants amend claims 2 – 4, 7 – 10, 14, 16, 23, 25, 27 – 30, 33, 34, and 57 to conform the language of these dependent claims to that of the amended independent claims. No new matter is added.

The claimed invention determines signal impairment correlations for use in received signal processing. Independent claim 1 includes the step of adapting model fitting parameters based on measured received signal impairment correlations and one or more model impairment terms using a fitting process. In other words, the claimed model fitting parameters are adjusted based on impairment correlation measurements to “fit” the model to the measurements. The fitting process may, for example, be a Least Squares (LS) fitting, wherein the model fitting parameters (e.g.,  $\alpha$  and  $\beta$ ) are iteratively adapted to minimize the error between the measured impairment correlations and the modeled impairment correlations. Independent claim 1 further includes the step of calculating modeled impairment correlations based on the adapted model fitting parameters.

Nielsen describes an Adaptive Generalized Matched Filter (AGMF) RAKE receiver system. In Nielsen, an AMGF weight determination module determines combining weights by

varying candidate combining weights until the signal-to-noise ratio (SNR) of the RAKE receiver output reaches a peak value (see Abstract). More particularly, Nielsen uses different total noise covariance matrices  $\mathbf{R}_u$ , where  $\mathbf{R}_u$  may be calculated as the sum of a predetermined impairment  $\mathbf{R}_{IND}$  and a measured impairment  $\mathbf{R}_{DEP}$ , scaled as a function of a scaling factor  $r_o$ , to determine different sets of combining weights  $\mathbf{w}$ . It is important to note that the AMGF module generates the different total noise covariance matrices by varying  $r_o$  while holding  $\mathbf{R}_{IND}$  and  $\mathbf{R}_{DEP}$  constant. For each of the resulting sets of combining weights  $\mathbf{w}$ , Nielsen determines a RAKE receiver output  $\mathbf{z}$  and a corresponding SNR. Nielsen selects the combining weights  $\mathbf{w}$  that produce the maximum SNR. See at least ¶s [0040] and [0042] – [0046]. In other words, Nielsen uses a trial and error process, which is wholly different from the claimed fitting process. Further, Nielsen's trial and error process is based on maximizing a computed SNR, which is contrary to the claimed use of measured impairment correlations and computed model impairment terms.

Because Nielsen's trial and error process cannot be construed as equivalent to the claimed fitting process, Nielsen does not anticipate independent claim 1. Thus, independent claim 1 and all claims depending therefrom are new and non-obvious over Nielsen. The applicants respectfully request reconsideration.

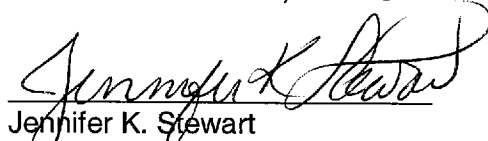
Each of the remaining independent claims (35, 36, 39, and 56) include the above-discussed "fitting process" limitation. Therefore, for substantially the same reasons presented above, independent claims 35, 36, 39, and 56 and all claims depending therefrom are new and non-obvious over Nielsen.

In light of the above remarks and amendments, the applicants respectfully request that the examiner reconsider and withdraw all rejections. Should any issues remain unresolved, the

applicants request that the examiner call the undersigned so that any such issues may be expeditiously resolved.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.

A handwritten signature in cursive script, appearing to read "Jennifer K. Stewart", written over a horizontal line.

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